



# Programming for IoT Applications

Edoardo Patti  
Project Guidelines





# Project Guidelines

## Team

- team members: **4**
- team building: autonomous
- Each team needs to send an email to both [edoardo.patti@polito.it](mailto:edoardo.patti@polito.it) and [rafael.fontana@polito.it](mailto:rafael.fontana@polito.it) specifying team members info (name, surname, student-ID and email address)



# Project Guidelines

To complete a project each team has to:

- submit a proposal that describes the general idea for an IoT platform and the role of its components. It must be compliant with
  - The topics of the course
  - The provided “proposal template.docx”.
- submit the source code
- make a “promo” video describing the proposed idea available on youtube (**max 4 minutes**)
- make a “demo” video (demonstrating that each component of the platform works) available on youtube (**max 10 minutes**)
- orally discuss the developed platform presenting it with PowerPoint slides. The discussion date is flexible (no deadline constraints) **max 20 min. Each Member must present his/her own part.**
- **In any case, all provided HW material must be strictly returned by beginning of September 2024 (strict deadline).**



# Project Guidelines

- Each team has to submit a proposal by **December 7<sup>th</sup>, 2023**
  - Send by email the provided template filled in all its parts to both [edoardo.patti@polito.it](mailto:edoardo.patti@polito.it) and [rafael.fontana@polito.it](mailto:rafael.fontana@polito.it).
- A proposal can either be:
  - **ACCEPTED** as it is.
  - Asked to perform **MINOR** or **MAJOR REVIEW**. The team has to modify the proposal following the given indications.
  - **REJECTED**. A new proposal must be resubmitted following the given indications.
- **Only after the proposal is ACCEPTED**, the team can start developing the platform
- Submit videos and source code to both [edoardo.patti@polito.it](mailto:edoardo.patti@polito.it) and [rafael.fontana@polito.it](mailto:rafael.fontana@polito.it) at least 5 days before the discussion.
- Source code must be sent via git, dropbox, or other sharing platforms.  
**DO NOT ATTACH ZIP FILES TO YOUR EMAILS**
- Example of videos are available at <https://goo.gl/Pdtp54>



# Project Guidelines

- The max final score for the project is **18/30**.
  - Each phase of the project is given a score.
- A **bonus** can be given (**max 2 points**) if the project includes additional tools and/or third-party platforms not presented during the course.
- The project will be **immediately rejected** if:
  - **Python is not the predominant programming language** (about 80% of the source code must be in Python, 20% other programming languages)
  - The IoT platform does not follow the **microservices** design pattern (**DO NOT DEVELOP MONOLITIC SOFTWARE**)
  - The IoT platform is not developed following the **Object Oriented Programming**



# Project Guidelines

## Good practice to have a good score:

- Define a proper **data-format** for data exchange
- Make the IoT platform **scalable to manage various IoT devices, users and contexts** (e.g. adding/removing new devices, users and context at run-time without modifying the source-code). Guarantee correlation among all the actors in the systems
- Use **configuration file** (e.g. a JSON file) to configure your IoT platform
- Guarantee information exchange among the actors in the system over the internet only (i.e. REST and/or MQTT)